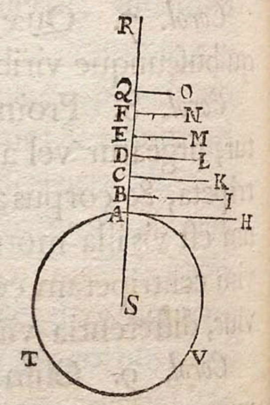
tu partium oriatur; nec lædent corporibus immerſis, nec ſenſationem ullam excitabunt, niſi quatenus hæc corpora a compreſſione condenſari poſſunt. Et par eſt ratio cujuſcunque corporum Syſtematis fluido comprimente circundati. Syſtematis partes omnes iiſdem agitabuntur motibus, ac ſi in vacuo conſtituerentur, ac ſolam retinerent gravitatem ſuam comparativam, niſi quatenus fluidum vel motibus earum nonnihil reſiſtat, vel ad eaſdem compreſſione conglutinandas requiratur.

Prop. XXI. Theor. XV.

Sit Fluidi cujuſdam denſitas compreſſioni proportionalis, & partes ejus a vi centripeta diſtantiis ſuis a centro reciproce proportionali deorſum trahantur: dico quod ſi diſtantiæ illæ ſumantur continue proportionales, denſitates fluidi in iiſdem diſtantiis erunt etiam continue proportionales.

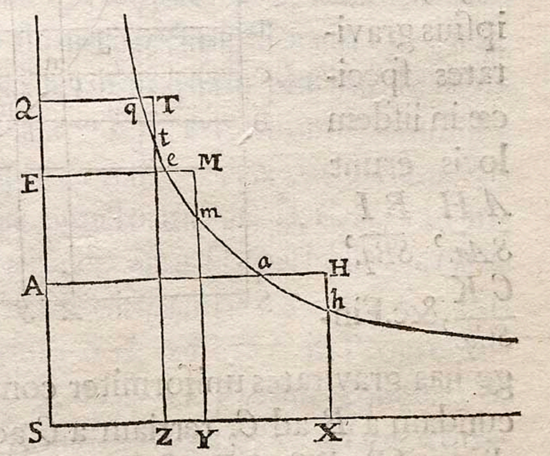
Deſignet ATV fundum Sphæricum cui fluidum incumbit, S centrum, SA, SB, SC, SD, SE, &c. diſtantias continue proportionales. Erigantur perpendicula AH, BI, CK, DL, EM, &c. quæ ſint ut denſitates Medii in locis A, B, C, D, E; & ſpecificæ gravitates in iiſdem locis erunt ut $\frac{AH}{AS}, \frac{BI}{BS}, \frac{CK}{CS}$, &c. vel, quod perinde eſt, ut $\frac{AH}{AB}, \frac{BI}{BC}, \frac{CK}{CD}$ &c. Finge primum has gravitates uniformiter continuari ab A ad B, a B ad C, a C ad D &c. factis per gradus decrementis in punctis B, C, D &c. Et hæ gravitates ductæ in altitudines AB, BC, CD &c. conficient preſſiones AH, BI, CK, quibus fundum ATV (juxta Theorema XIV.) urgetur. Suſtinet ergo particula A preſſiones omnes AH, BI, CK, DL, pergendo in infinitum; & particula B preſſiones omnes præter primam AH; & particula C omnes præter duas primas AH, BI; & ſic deinceps:



adeoque

adeoque particulæ primæ A denſitas AH eſt ad particulæ ſecundæ B denſitatem BI ut ſumma omnium $AH+BI+CK+DL$, in infinitum, ad ſummam omnium $BI+CK+DL$, &c. Et BI denſitas ſecundæ B, eſt ad CK denſitatem tertiæ C, ut ſumma omnium $BI+CK+DL$, &c. ad ſummam omnium $CK+DL$, &c. Sunt igitur ſummæ illæ differentiis ſuis AH, BI, CK, &c. proportionales, atque adeo continue proportionales per hujus Lem. I. proindeq; differentiæ AH, BI, CK, &c. ſummis proportionales, ſunt etiam continue proportionales. Quare cum denſitates in locis A, B, C ſint ut AH, BI, CK, &c. erunt etiam hæ continue proportionales. Pergatur per ſaltum, & (ex æquo) in diſtantiis SA, SC, SE continue proportionalibus, erunt denſitates AH, CK, EM continue proportionales. Et eodem argumento in diſtantiis quibuſvis continue proportionalibus SA, SD, SQ denſitates AH, DL, QO erunt continue proportionales. Coeant jam puncta A, B, C, D, E, &c. eo ut progreſſio gravitatum ſpecificarum a fundo A ad ſummitatem Fluidi continua reddatur, & in diſtantiis quibuſvis continue proportionalibus SA, SD, SQ, denſitates AH, DL, QT, ſemper exiſtentes continue proportionales, manebunt etiamnum continue proportionales. *Q. E. D.*

Corol. Hinc ſi detur denſitas Fluidi in duobus locis, puta A & E, colligi poteſt ejus denſitas in alio quovis loco Q. Centro S, Aſymptotis rectangulis SQ, SX deſcribatur Hyperbola ſecans perpendicula AH, EM, QT in a, e, q, ut & perpendicula HX, MY, TZ ad aſymptoton SX demiſſa in h, m, & t. Fiat area $ZYmtZ$ ad aream datam $YmhX$ ut area data $EeqQ$ ad aream datam $EeaA$; & linea Zt producta abſcindet lineam QT denſitati proportionalem. Namque ſi lineæ SA, SE, SQ ſunt continue proportionales, erunt



areæ